

oligonucleotide system including an anchor oligonucleotide and an amplifier oligonucleotide, each of said anchor and said amplifier oligonucleotides including a first region being capable of hybridizing with the target nucleic acid sequence, each of said anchor and said amplifier oligonucleotides further including a second region, said second regions of said anchor and said amplifier oligonucleotides being capable of forming a duplex structure including a nucleic acid cleaving agent recognition sequence following hybridization of said first regions of said anchor and said amplifier oligonucleotides with the target nucleic acid sequence, said anchor and said amplifier oligonucleotides are selected such that when hybridized with the target nucleic acid sequence in a presence of a nucleic acid cleaving agent recognizing said nucleic acid cleaving agent recognition sequence, only said amplifier oligonucleotide is cleavable by said nucleic acid cleaving agent, wherein cleavage of said amplifier oligonucleotide leads to dissociation of said amplifier oligonucleotide from the target nucleic acid sequence while said anchor oligonucleotide remains hybridized to the target nucleic acid sequence to form a stabilized anchor oligonucleotide-target nucleic acid sequence hybrid thereby allowing a second and uncleaved amplifier oligonucleotide to hybridize with said anchor oligonucleotide-target nucleic acid sequence hybrid thus enabling recycling of said anchor oligonucleotide-target nucleic acid sequence hybrid with respect to said amplifier oligonucleotide.

- (b) adding said nucleic acid cleaving agent to said reaction mixture under predetermined reaction conditions, such that, if the target nucleic acid sequence is present in the sample, said nucleic acid

SUB

C1

CONT.

AI  
CONT

cleaving agent recognition sequence is cleaved by said nucleic acid cleaving agent; and

- (c) monitoring cleavage of said nucleic acid cleaving agent recognition sequence by said nucleic acid cleaving agent;

wherein cleavage of said nucleic acid cleaving agent recognition sequence by said nucleic acid cleaving agent indicates hybridization of the oligonucleotide system to the target nucleic acid sequence and therefore the presence of the target nucleic acid in the sample.

88. (New) The method of claim 87, wherein under said hybridization conditions said first region of said amplifier oligonucleotide is stably hybridizable with said target nucleic acid sequence only if said first region of said anchor oligonucleotide is stably hybridizable with said nucleic acid target sequence.

89. (New) The method of claim 87, wherein at least one nucleotide or internucleotidic bond of said anchor oligonucleotide which forms a part of said nucleic acid cleaving agent recognition sequence includes a modification selected so as to prevent cleavage of said anchor oligonucleotide by said nucleic acid cleaving agent.

90. (New) The method of claim 87, wherein said duplex structure is formed in part by self annealing of a portion of said second region of said amplifier oligonucleotide.

91. (New) The method of claim 87, wherein a sequence of said first region of said anchor oligonucleotide is selected such that said anchor oligonucleotide remains annealed with said target nucleic acid sequence under

SUB  
C1  
CONT.

Al  
CONT

AI  
concl  
said predetermined reaction conditions, whereas said sequence of said first region of said amplifier oligonucleotide is selected such that said amplifier oligonucleotide dissociates from said target nucleic acid sequence under said predetermined reaction conditions, following cleavage of said nucleic acid cleaving agent recognition sequence by said nucleic acid cleaving agent.

92. (New) The method of claim 91, wherein a  $T_m$  of said first region of said anchor oligonucleotide is at least 10 °C higher than said  $T_m$  of said first region of said amplifier oligonucleotide.

---

### REMARKS

Reconsideration of the above-identified application in view of the amendments above and the remarks following is respectfully requested.

Claims 1-86 are in this case. Of the above, claims 1-13, 27-40, 56-70, and 85 have been withdrawn from consideration under a restriction requirement as drawn to a non-elected invention. Claims 14-26, 41-55, 71-84 and 86 have been rejected. Claims 1-86 have now been cancelled. New claims 87-92 have now been added.

### *35 U.S.C. § 112, Second Paragraph, Rejections*

The Examiner has rejected claims 14 -26 under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claims 14-26 have now been cancelled thus rendering moot Examiner's rejections with respect to these claims.

In particular, the Examiner points out that claims 14-26 are rejected because "It is vague and indefinite what is meant by the phrase 'said first, second, third and fourth regions... being selected such that...said first duplex